

Unix Lab 1

CS 245

Sept. 16, 2002

1. Login to a Windows workstation and start the SSH Secure Shell Client software. Click the *Quick Connect* button and enter the Host Name (`black.goucher.edu`) and User Name information requested for the dialog box which pops up. Click the *Connect* button and then enter your password into the next dialog box.

Unix is case sensitive — be careful when entering username and password!

A brief bit of documentation on SSH Secure Shell is available here

(<http://phoenix.goucher.edu/~kelliher/SSH/>). In particular, you can download a copy of the software for educational use.

2. You should now be sitting at a command line prompt on black:

```
>
```

(or something similar). You type a command and then press **Enter** to run it. You can edit a command before you run it by using the arrow keys to navigate the command line.

3. Copy a file from a directory under my home directory to your home directory:

```
cp ~kelliher/pub/.emacs .
```

4. Run the `emacs` editor on your `.cshrc` file in your home directory. You'll have to use the full path this first time:

```
/usr/local/bin/emacs .cshrc
```

(You are in your home directory when you first login).

Find the line which contains:

```
(/bin /usr/bin /usr/ucb /etc .)
```

and edit it so that it appears like this:

```
(/usr/local/bin /bin /usr/bin /usr/ucb /etc)
```

Add these lines to the end of the file:

```

umask 077
set prompt="%m:%~\
%% "
alias .      logout
alias ?      apropos
alias cp cp -i
alias grep  grep -i
alias h      history 25
alias ls ls -F
alias ll ls -l
alias mv mv -i
alias rm rm -i

```

Save the file (type `C-x C-s`) and find your `.login` file (type `C-x C-f .login`). Add these lines to the end of the file:

```

setenv BLOCKSIZE 1K
setenv LESS "-ceiMswx3"
setenv PAGER less
setenv PRINTER pclab

```

Save the file (type `C-x C-s`) and exit from emacs (type `C-x C-c`).

5. This is important to do now so that the two new environment variables are read properly: log out (run the `logout` command) then log back in.

Did you notice that your command line prompt has changed? It now shows the machine name and the directory you're in (`~` is the abbreviation for your home directory).

After logging back in, you can run `emacs` just by typing `emacs`.

6. If you're using the system for the first time, you should change your password. Before selecting a password, read the file `/usr/local/info/password` for advice on choosing a good password:

```
less /usr/local/info/password
```

(The shell you're using has file completion. Type the command above up to `/usr/loc` and press the `Tab` key. The rest of the path component — `al` — will be filled in for you. This saves typing when you have long filenames)

Within `less`, use the space bar and `b` key to move down or up, respectively, a page. Type `q` to quit `less`.

7. Use the `passwd` command to change your password. Assuming that your Goucher network password is a good password, use that one. If it isn't, don't use it. I run a password cracking program every so often, so if you choose a weak password I'll find out and you'll have to change it.
8. Using `emacs`, create a file named `name` containing your name. Print the file:

```
lpr name
```

The file should be printed on the printer in HS 149. If you ever want to print to the printer in the X Lab, you must use the `-P` switch:

```
lpr -Pps <filename>
```

Remove the file you just created:

```
rm name
```

Unlike Windows, once you remove a file in Unix, it is gone for good. So be careful!

9. Change directories to `/etc`:

```
cd /etc
```

You can verify that you're where you think you are by running the print working directory command: `pwd`.

Using the `ls` command, list the files in `/etc`. Too many to fit on a single screen? Pipe the output to the paging program:

```
ls | less
```

Repeat again using the `-l` option to `ls` What's the difference?

10. Change directories back to your home directory (run `cd` without an argument). List the files in your home directory. Try again using the `-a` option. What's the difference? Read the man page for `ls` to read about these two options and find what other options are available:

```
man ls
```

11. Using the `mkdir` command, create a sub-directory within your home directory for this lab: `unix1`. It is a good idea to create a new directory each time you start a new assignment or project, so that you don't clutter up your home directory.
12. `cd` to `~kelliher/pub/cs245` and use `cp` to copy `Prog.java` to your `unix1` directory:

```
cp Prog.java ~/unix1
```

13. Change directories back to you `unix1` directory and compile the program:

```
javac Prog.java
```

14. Run the program:

```
java Prog
```

15. If there is time, re-write the program so that it prints the first 10 numbers in the Fibonacci sequence. Fib_0 is 0 and Fib_1 is 1. The recurrence equation for succeeding elements of the sequence is $Fib_i = Fib_{i-1} + Fib_{i-2}$.
16. When you're finished, `logout` from `black`.